Pimpri Chinchwad Education Trust's
Pimpri Chinchwad College of Engineering

Assignment-02

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Q.1 Write an android application which will allow users to navigate from one activity to another activity. The first Activity will ask the user to enter the name user and the Second activity will display the name in TextView which was entered in the first activity.

Solution:

xml:
activity_main:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <EditText
     android:id="@+id/editTextName"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:hint="Enter your name" />

  <Button
     android:id="@+id/buttonSubmit"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:text="Submit" />

</LinearLayout>
```

activity_second:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <TextView
     android:id="@+id/textViewName"
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="20sp"
    android:text="Your name will be displayed here" />

</LinearLayout>
```

java:

mainactivity:

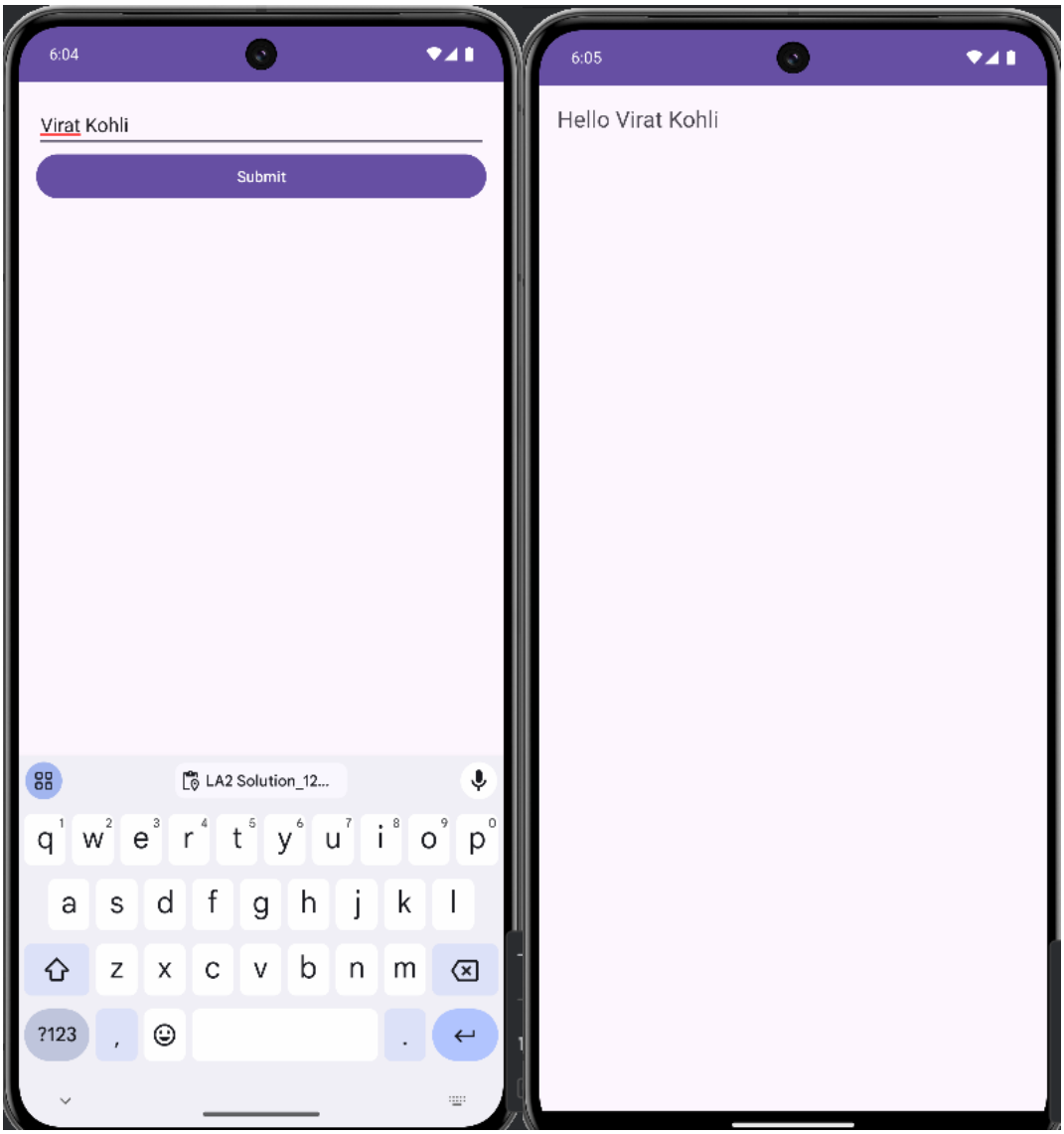
```
package com.example.la2q1;

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    EditText editTextName = findViewById(R.id.editTextName);
    Button buttonSubmit = findViewById(R.id.buttonSubmit);

    buttonSubmit.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
        String userName = editTextName.getText().toString();

        Intent intent = new Intent(MainActivity.this, SecondActivity.class);
        intent.putExtra("USER_NAME", userName);

        startActivity(intent);
      }
    });
  }
}
```

secondactivity:

```
package com.example.la2q1;

import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
```

```
public class SecondActivity extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_second);

     TextView textViewName = findViewById(R.id.textViewName);

     Intent intent = getIntent();
     String name = intent.getStringExtra("USER_NAME");

     textViewName.setText("Hello " + name);
  }
}
```

Output:



1. Write an android application that asks the user to enter the URL, and after clicking the button, the URL link should be opened in the web browser in an emulator.

Solution:

xml:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <EditText
    android:id="@+id/editTextURL"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:hint="Enter URL"
    android:inputType="textUri" />
```

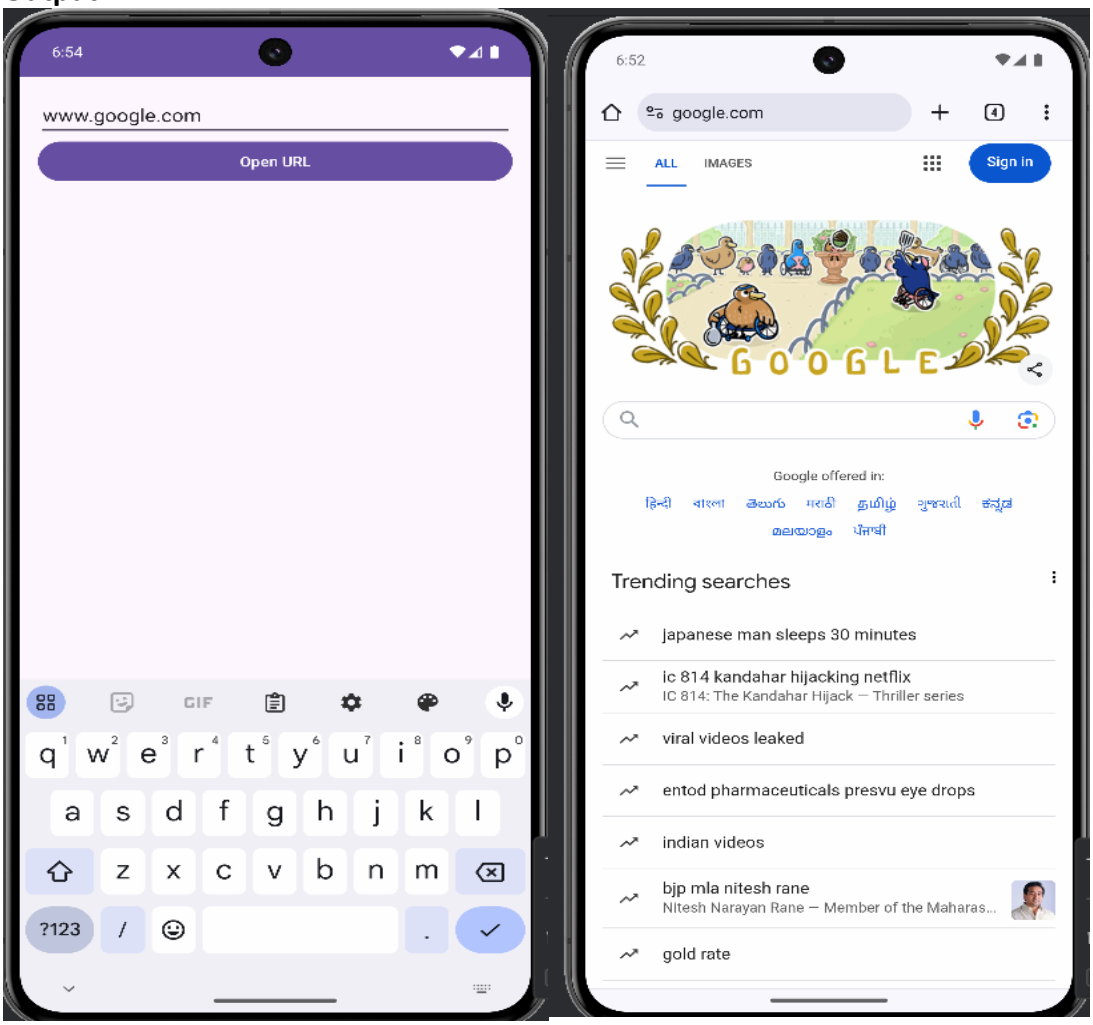
```
  <Button
    android:id="@+id/buttonOpenURL"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Open URL" />
</LinearLayout>
```

java:

```
package com.example.la2q2;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    EditText editTextURL = findViewById(R.id.editTextURL);
    Button buttonOpenURL = findViewById(R.id.buttonOpenURL);

    buttonOpenURL.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
        String url = editTextURL.getText().toString().trim();

        if (!url.isEmpty()) {
          if (!url.startsWith("http://") && !url.startsWith("https://")) {
            url = "http://" + url;
          }

          Intent browserIntent = new Intent(Intent.ACTION_VIEW, Uri.parse(url));
          startActivity(browserIntent);
        } else {
          Toast.makeText(MainActivity.this, "Please enter url", Toast.LENGTH_SHORT).show();
        }
      }
    });
```

```
  }
}
```

Output:



2. Write an android application that will demonstrate the use of BaseAdapter and ArrayAdapter.

Solution:

xml:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">
```

```
  <TextView
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:text="ArrayAdapter Example"
     android:textSize="18sp"
     android:paddingBottom="8dp"/>

  <ListView
     android:id="@+id/listViewArrayAdapter"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_weight="1"/>

  <TextView
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:text="BaseAdapter Example"
     android:textSize="18sp"
     android:paddingBottom="8dp"/>

  <ListView
     android:id="@+id/listViewBaseAdapter"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_weight="1"/>
</LinearLayout>
```

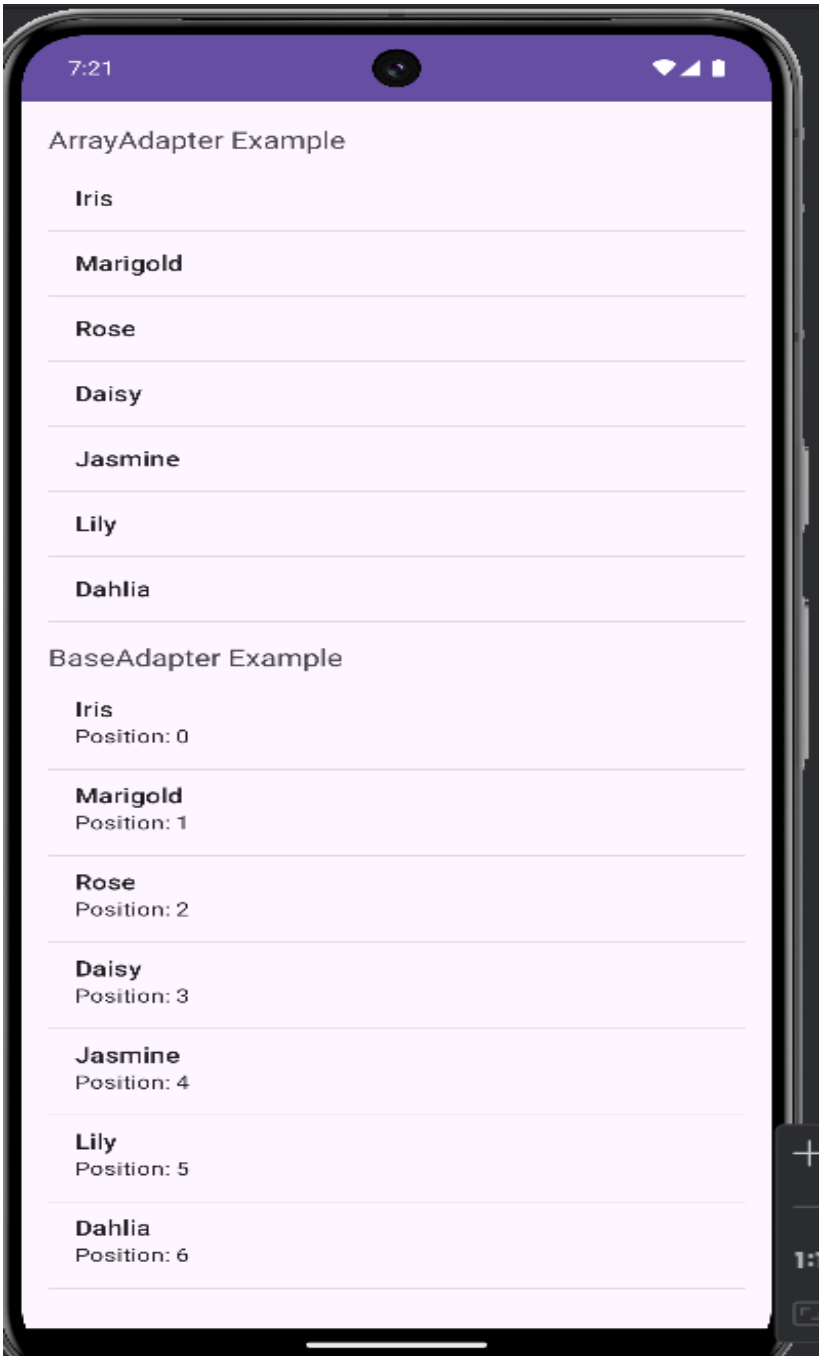
java:

```
package com.example.la2q3;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ArrayAdapter;
import android.widget.BaseAdapter;
import android.widget.ListView;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);

     ListView listViewArrayAdapter = findViewById(R.id.listViewArrayAdapter);
     String[] fruits = {"Iris", "Marigold", "Rose", "Daisy", "Jasmine", "Lily", "Dahlia"};

     ArrayAdapter<String> arrayAdapter = new ArrayAdapter<>(this, android.R.layout.simple_list_item_1, fruits);
```

```
    listViewArrayAdapter.setAdapter(arrayAdapter);

    ListView listViewBaseAdapter = findViewById(R.id.listViewBaseAdapter);
    CustomAdapter customAdapter = new CustomAdapter(fruits);
    listViewBaseAdapter.setAdapter(customAdapter);
  }

  class CustomAdapter extends BaseAdapter {

    private String[] data;

    public CustomAdapter(String[] data) {
      this.data = data;
    }

    @Override
    public int getCount() {
      return data.length;
    }

    @Override
    public Object getItem(int position) {
      return data[position];
    }

    @Override
    public long getItemId(int position) {
      return position;
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
      ViewHolder holder;

      if (convertView == null) {
        convertView = LayoutInflater.from(parent.getContext()).inflate(android.R.layout.simple_list_item_2,
parent, false);
        holder = new ViewHolder();
        holder.textView1 = convertView.findViewById(android.R.id.text1);
        holder.textView2 = convertView.findViewById(android.R.id.text2);
        convertView.setTag(holder);
      } else {
        holder = (ViewHolder) convertView.getTag();
      }

      holder.textView1.setText(data[position]);
      holder.textView2.setText("Position: " + position);

      return convertView;
    }

    class ViewHolder {
      TextView textView1;
```

```
        TextView textView2;
    }
  }
}
```

Output:



3. Write an android application for Gallery using adapters.

Solution:

xml:

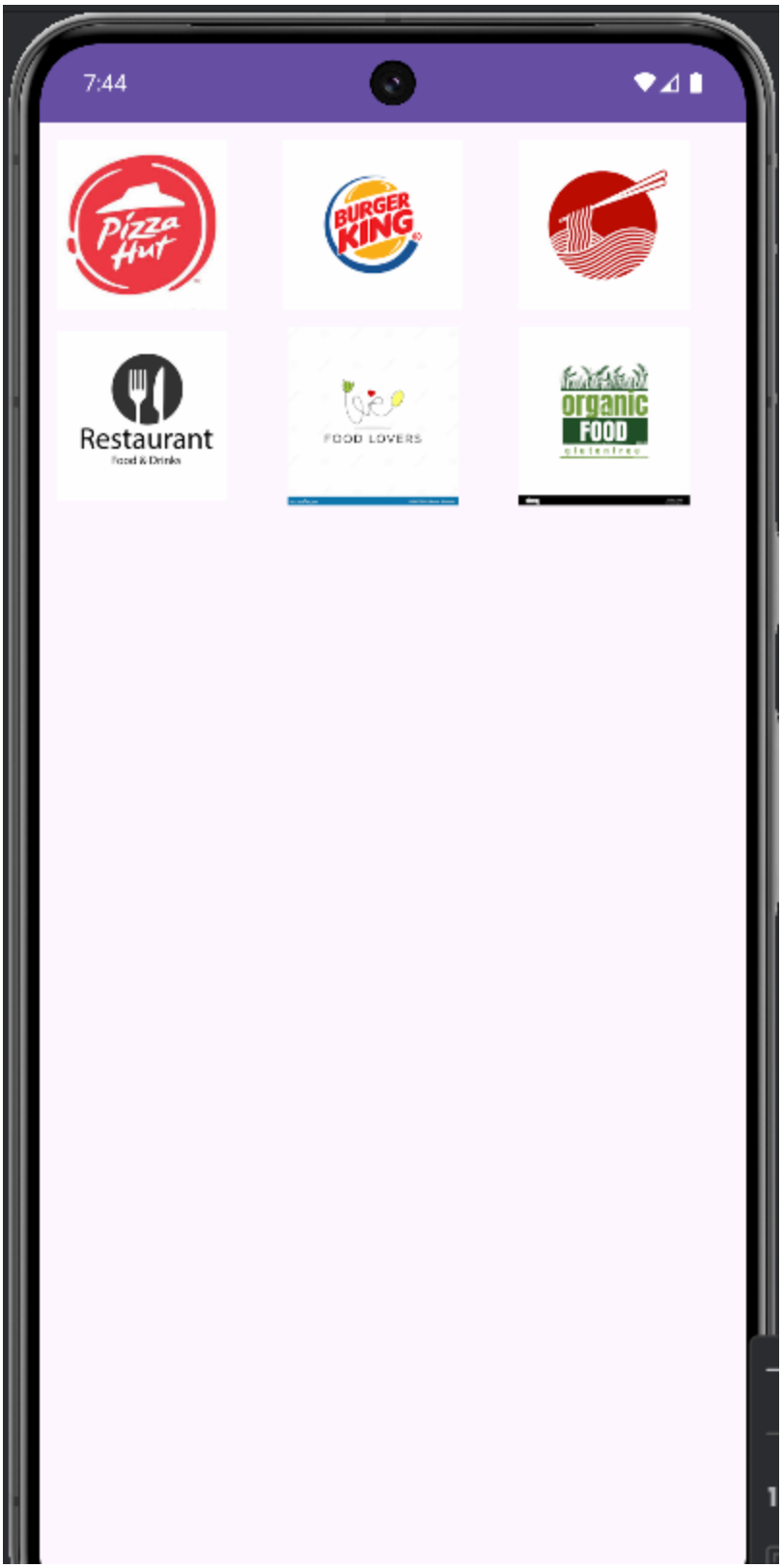
```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="8dp">

  <GridView
     android:id="@+id/gridView"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:numColumns="3"
     android:verticalSpacing="8dp"
     android:horizontalSpacing="8dp"
     android:stretchMode="columnWidth"/>
</LinearLayout>
```

java:

```
package com.example.la2q4;

import android.content.Context;
import android.os.Bundle;
import android.view.View;
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.GridView;
import android.widget.ImageView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

  private Integer[] imageIds = {
        R.drawable.image1, R.drawable.image2, R.drawable.image3,
        R.drawable.image4, R.drawable.image5, R.drawable.image6 };

  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);

     GridView gridView = findViewById(R.id.gridView);
     ImageAdapter imageAdapter = new ImageAdapter(this, imageIds);
     gridView.setAdapter(imageAdapter);
  }

  public class ImageAdapter extends BaseAdapter {
     private Context context;
```

```
    private Integer[] imageIds;

    public ImageAdapter(Context context, Integer[] imageIds) {
        this.context = context;
        this.imageIds = imageIds;
    }

    @Override
    public int getCount() {
        return imageIds.length;
    }

    @Override
    public Object getItem(int position) {
        return imageIds[position];
    }

    @Override
    public long getItemId(int position) {
        return position;
    }

    @Override
    public View getView(int position, View convertView, ViewGroup parent) {
        ImageView imageView;

        if (convertView == null) {
            imageView = new ImageView(context);
            imageView.setLayoutParams(new GridView.LayoutParams(340, 340));
            imageView.setScaleType(ImageView.ScaleType.CENTER_CROP);
            imageView.setPadding(8, 8, 8, 8);
        } else {
            imageView = (ImageView) convertView;
        }

        imageView.setImageResource(imageIds[position]);
        return imageView;
    }
  }
}
```

Output:



4. Write an application demonstrating the use of Android Session Management.

Solution:

xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">
  <androidx.appcompat.widget.Toolbar
     android:id="@+id/toolbar"
     app:title="@string/app_name"
     app:titleTextColor="@color/white"
     android:layout_width="match_parent"
     android:layout_height="?attr/actionBarSize"
     android:background="?attr/colorPrimary" />
  <EditText
     android:id="@+id/idEdtEmail"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_below="@id/toolbar"
     android:layout_marginStart="10dp"
     android:layout_marginTop="50dp"
     android:layout_marginEnd="10dp"
     android:hint="@string/enter_youe_email"
     android:importantForAutofill="no"
     android:inputType="textEmailAddress" />
  <EditText
     android:id="@+id/idEdtPassword"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_below="@id/idEdtEmail"
     android:layout_marginStart="10dp"
     android:layout_marginTop="30dp"
     android:layout_marginEnd="10dp"
     android:hint="@string/enter_password"
     android:importantForAutofill="no"
     android:inputType="textPassword" />

  <Button
     android:id="@+id/idBtnLogin"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_below="@id/idEdtPassword"
     android:layout_marginStart="10dp"
     android:layout_marginTop="30dp"
     android:layout_marginEnd="10dp"
     android:text="@string/login" />
</RelativeLayout>
```

activity_home.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".HomeActivity">

  <TextView
     android:id="@+id/idTVWelcome"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_centerInParent="true"
     android:padding="5dp"
     android:textAlignment="center"
     android:textSize="20sp" />
  <Button
     android:id="@+id/idBtnLogout"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:layout_below="@id/idTVWelcome"
     android:layout_marginStart="20dp"
     android:layout_marginTop="20dp"
     android:layout_marginEnd="20dp"
     android:text="@string/logout" />
</RelativeLayout>
```

java:

```
package com.example.la2q5;
import android.content.Context;
import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.text.TextUtils;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
  public static final String SHARED_PREFS = "shared_prefs";
  public static final String EMAIL_KEY = "email_key";
  public static final String PASSWORD_KEY = "password_key";
  SharedPreferences sharedpreferences;
  String email, password;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);

     EditText emailEdt = findViewById(R.id.idEdtEmail);
```

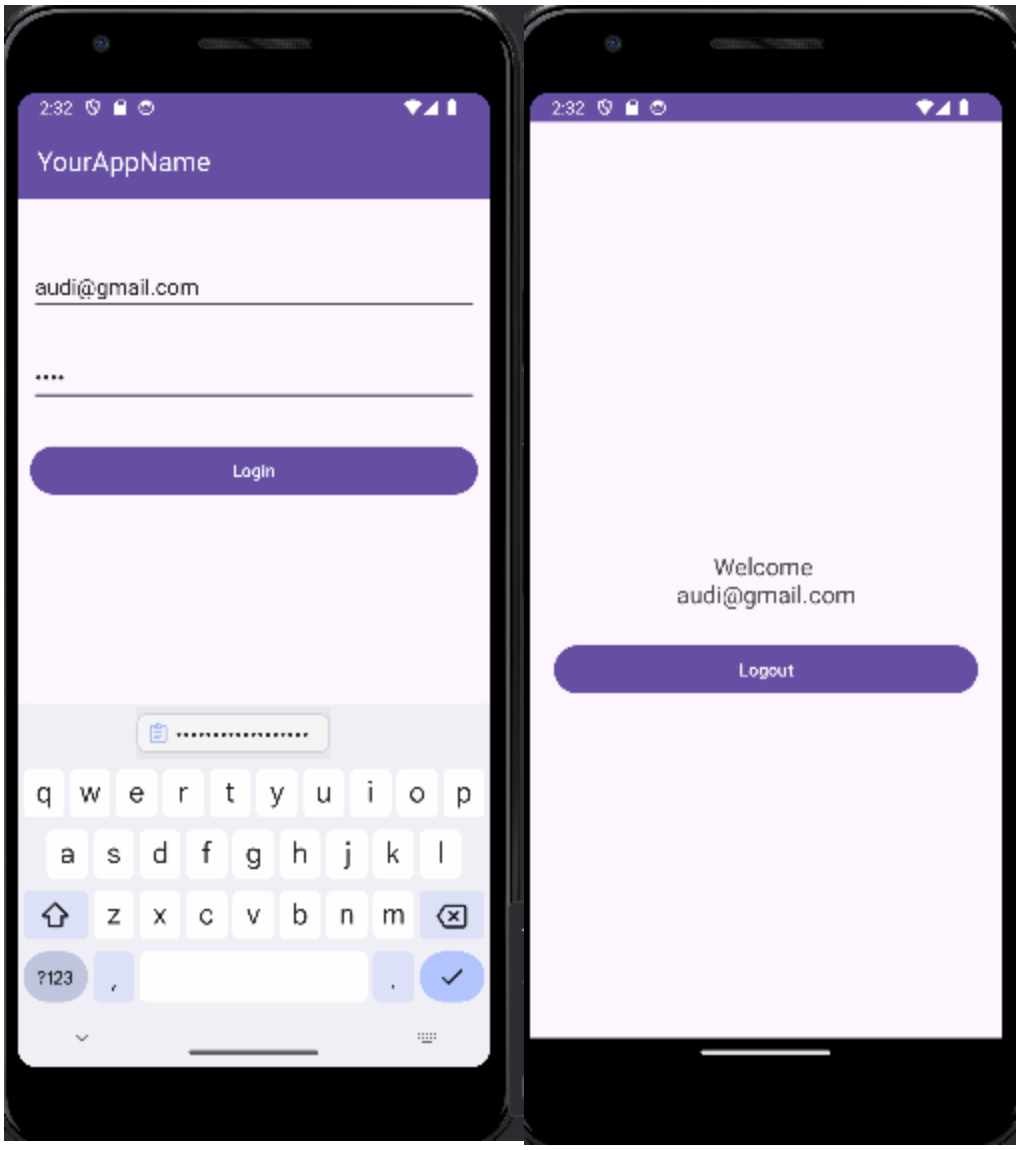
```
    EditText passwordEdt = findViewById(R.id.idEdtPassword);
    Button loginBtn = findViewById(R.id.idBtnLogin);
    sharedpreferences = getSharedPreferences(SHARED_PREFS,
            Context.MODE_PRIVATE);
    email = sharedpreferences.getString(EMAIL_KEY, null);
    password = sharedpreferences.getString(PASSWORD_KEY, null);
    if (email != null && password != null) {
        Intent i = new Intent(MainActivity.this, HomeActivity.class);
        startActivity(i);
        finish();
    }
    loginBtn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            if (TextUtils.isEmpty(emailEdt.getText().toString()) &&
                    TextUtils.isEmpty(passwordEdt.getText().toString())) {
                Toast.makeText(MainActivity.this, "Please Enter Email and Password",
                        Toast.LENGTH_SHORT).show();
            } else {
                SharedPreferences.Editor editor = sharedpreferences.edit();

                editor.putString(EMAIL_KEY, emailEdt.getText().toString());
                editor.putString(PASSWORD_KEY, passwordEdt.getText().toString());
                editor.apply();
                Intent i = new Intent(MainActivity.this, HomeActivity.class);
                startActivity(i);
                finish();
            }
        }
    });
  }
}
```

HomeActivity.java:

```
package com.example.la2q5;
import android.content.Context;

import android.content.Intent;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
public class HomeActivity extends AppCompatActivity {
  public static final String SHARED_PREFS = "shared_prefs";
  public static final String EMAIL_KEY = "email_key";
  public static final String PASSWORD_KEY = "password_key";
  SharedPreferences sharedpreferences;
  String email;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
```

```
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_home);
    sharedpreferences = getSharedPreferences(SHARED_PREFS,
            Context.MODE_PRIVATE);
    email = sharedpreferences.getString(EMAIL_KEY, null);
    TextView welcomeTV = findViewById(R.id.idTVWelcome);
    welcomeTV.setText("Welcome \n" + email);
    Button logoutBtn = findViewById(R.id.idBtnLogout);
    logoutBtn.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            SharedPreferences.Editor editor = sharedpreferences.edit();
            editor.clear();
            editor.apply();
            Intent i = new Intent(HomeActivity.this, MainActivity.class);
            startActivity(i);
            finish();

        }
    });
  }
}
```

Output:



5. Write an android application which will create three fragments in a single activity.

Solution:

xml:

activitymain:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical">

  <FrameLayout
     android:id="@+id/fragmentContainer1"
     android:layout_width="match_parent"
     android:layout_height="0dp"
     android:layout_weight="1"
     android:background="#FFCDD2"/>
```

```
  <FrameLayout
     android:id="@+id/fragmentContainer2"
     android:layout_width="match_parent"
     android:layout_height="0dp"
     android:layout_weight="1"
     android:background="#C8E6C9"/>

  <FrameLayout
     android:id="@+id/fragmentContainer3"
     android:layout_width="match_parent"
     android:layout_height="0dp"
     android:layout_weight="1"
     android:background="#BBDEFB"/>
</LinearLayout>
```

fragment_one:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:gravity="center"
  android:padding="16dp">

  <TextView
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:text="Fragment One"
     android:textSize="24sp"
     android:textColor="#000000"/>
</LinearLayout>
```

fragment_two:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:gravity="center"
  android:padding="16dp">

  <TextView
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:text="Fragment Two"
     android:textSize="24sp"
     android:textColor="#000000"/>
</LinearLayout>
```

fragment_three:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
```

```
  android:orientation="vertical"
  android:gravity="center"
  android:padding="16dp">

  <TextView
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:text="Fragment Three"
     android:textSize="24sp"
     android:textColor="#000000"/>
</LinearLayout>
```

java:

mainactivity:

```
package com.example.la2q6;

import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentTransaction;



public class MainActivity extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);

     loadFragment(new fragment_one(), R.id.fragmentContainer1);
     loadFragment(new fragment_two(), R.id.fragmentContainer2);
     loadFragment(new fragment_three(), R.id.fragmentContainer3);
  }

  private void loadFragment(Fragment fragment, int containerId) {
     FragmentTransaction transaction = getSupportFragmentManager().beginTransaction();
     transaction.replace(containerId, fragment);
     transaction.commit();
  }
}
```

fragment_one:

```
package com.example.la2q6;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
```

```
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class fragment_one extends Fragment {

  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle
savedInstanceState) {
      return inflater.inflate(R.layout.fragment_one, container, false);
  }
}
```

fragment_two:

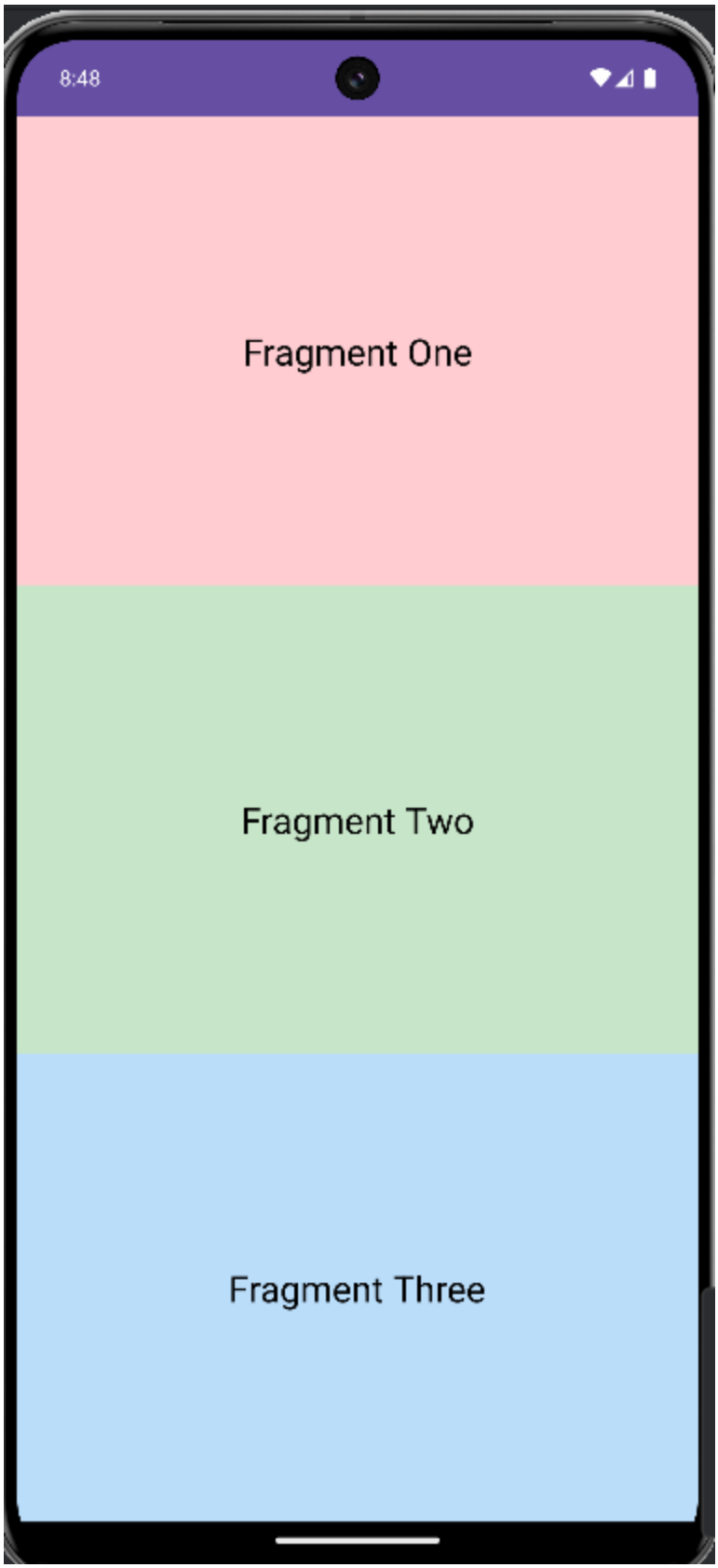
```
// src/java/com/example/yourapp/FragmentTwo.java
package com.example.la2q6;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class fragment_two extends Fragment {

  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle
savedInstanceState) {
      return inflater.inflate(R.layout.fragment_two, container, false);
  }
}
```

fragment_three:

```
package com.example.la2q6;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;

public class fragment_three extends Fragment {

  @Nullable
  @Override
```

```
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle
savedInstanceState) {
      return inflater.inflate(R.layout.fragment_three, container, false);
  }
}
```

Output:



6. Write an android application for Fragment Activity Life Cycle.

Solution:

xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">
  <FrameLayout
     android:id="@+id/fragmentContainer"
     android:layout_width="match_parent"
     android:layout_height="0dp"
     android:layout_weight="1"
     android:background="@android:color/darker_gray" />
  <LinearLayout
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:orientation="horizontal"
     android:gravity="center">
     <Button
        android:id="@+id/buttonAddFragment"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

        android:text="Add Fragment" />
     <Button
        android:id="@+id/buttonRemoveFragment"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Remove Fragment"
        android:layout_marginStart="16dp" />
  </LinearLayout>
</LinearLayout>
```

activity_fragment_lifecycle.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp"
  android:gravity="center">
  <TextView
     android:id="@+id/lifecycleTextView"
     android:layout_width="match_parent"
     android:layout_height="wrap_content"
     android:text="Fragment Lifecycle States:"
     android:textSize="18sp" />
</LinearLayout>
```

java:

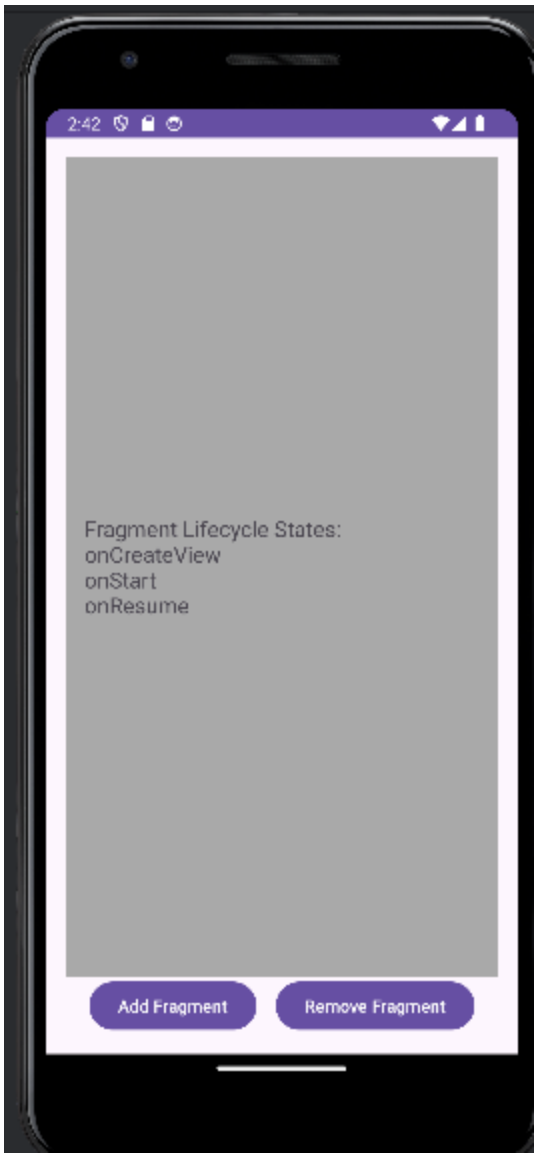
```java
package com.example.la2q7;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentTransaction;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
  private Button buttonAddFragment, buttonRemoveFragment;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    buttonAddFragment = findViewById(R.id.buttonAddFragment);
    buttonRemoveFragment = findViewById(R.id.buttonRemoveFragment);
    buttonAddFragment.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        addFragment();
      }
    });
    buttonRemoveFragment.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View v) {
        removeFragment();
      }
    });
  }
  private void addFragment() {
    FragmentLifecycleDemo fragment = new FragmentLifecycleDemo();

    FragmentTransaction transaction =
        getSupportFragmentManager().beginTransaction();
    transaction.add(R.id.fragmentContainer, fragment, "LIFECYCLE_FRAGMENT");
    transaction.addToBackStack(null); // To handle back navigation
    transaction.commit();
  }
  private void removeFragment() {
    Fragment fragment =
        getSupportFragmentManager().findFragmentByTag("LIFECYCLE_FRAGMENT");
    if (fragment != null) {
      FragmentTransaction transaction =
          getSupportFragmentManager().beginTransaction();
      transaction.remove(fragment);
      transaction.commit();
    }
  }
}
```

fragmentLifecycle.java:

```
package com.example.la2q7;
import android.os.Bundle;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
public class FragmentLifecycleDemo extends Fragment {
  private static final String TAG = "FragmentLifecycle";
  private TextView lifecycleTextView;
  @Override
  public void onCreate(@Nullable Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    Log.d(TAG, "onCreate called");
  }
  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup
      container,
                @Nullable Bundle savedInstanceState) {
    Log.d(TAG, "onCreateView called");
    View view = inflater.inflate(R.layout.activity_fragment_lifecycle_demo, container, false);

    lifecycleTextView = view.findViewById(R.id.lifecycleTextView);
    updateLifecycleState("onCreateView");
    return view;
  }
  @Override
  public void onStart() {
    super.onStart();
    Log.d(TAG, "onStart called");
    updateLifecycleState("onStart");
  }
  @Override
  public void onResume() {
    super.onResume();
    Log.d(TAG, "onResume called");
    updateLifecycleState("onResume");
  }
  @Override
  public void onPause() {
    super.onPause();
    Log.d(TAG, "onPause called");
    updateLifecycleState("onPause");
  }
  @Override
  public void onStop() {
    super.onStop();
```

```
    Log.d(TAG, "onStop called");
    updateLifecycleState("onStop");
  }
  @Override
  public void onDestroyView() {
    super.onDestroyView();
    Log.d(TAG, "onDestroyView called");
    updateLifecycleState("onDestroyView");
  }
  @Override
  public void onDestroy() {
    super.onDestroy();
    Log.d(TAG, "onDestroy called");

    updateLifecycleState("onDestroy");
  }
  private void updateLifecycleState(String state) {
    if (lifecycleTextView != null) {
      String currentText = lifecycleTextView.getText().toString();
      lifecycleTextView.setText(currentText + "\n" + state);
    }
  }
}
```

Output:



7. Write an android application that will look like WhatsApp Application using Fragment.

Solution:

xml:

Fraagement_contacts.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent">

  <!-- Contacts Fragment Layout -->
  <TextView
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:text="Whatsapp contacts"
```

```
    android:textSize="24sp"/>
</RelativeLayout>
```

Fragment_settings.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent">

  <!-- Settings Fragment Layout -->
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Whatsapp settings"
    android:textSize="24sp"/>
</RelativeLayout>
```

Fragment_chat.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent">

  <!-- Settings Fragment Layout -->
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Whatsapp settings"
    android:textSize="24sp"/>
</RelativeLayout>
```

Activitymain.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.coordinatorlayout.widget.CoordinatorLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">

  <androidx.fragment.app.FragmentContainerView
    android:id="@+id/fragment_container"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="fill"/>

  <com.google.android.material.bottomnavigation.BottomNavigationView
    android:id="@+id/bottom_navigation"
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
    android:layout_gravity="bottom"
    app:menu="@menu/bottom_nav_menu"
    app:labelVisibilityMode="labeled"/>

</androidx.coordinatorlayout.widget.CoordinatorLayout>
```

java:

```
package com.example.myapplication;

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import androidx.fragment.app.FragmentManager;
import androidx.fragment.app.FragmentTransaction;
import com.google.android.material.bottomnavigation.BottomNavigationView;

public class MainActivity extends AppCompatActivity {

  private BottomNavigationView bottomNavigationView;
  private FragmentManager fragmentManager;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    bottomNavigationView = findViewById(R.id.bottom_navigation);
    fragmentManager = getSupportFragmentManager();

    bottomNavigationView.setOnNavigationItemSelectedListener(item -> {
      Fragment selectedFragment = null;

      if (item.getItemId() == R.id.nav_chats) {
        selectedFragment = new ChatFragment();
      } else if (item.getItemId() == R.id.nav_contacts) {
        selectedFragment = new ContactsFragment();
      } else if (item.getItemId() == R.id.nav_settings) {
        selectedFragment = new SettingsFragment();
      }

      if (selectedFragment != null) {
        FragmentTransaction transaction = fragmentManager.beginTransaction();
        transaction.replace(R.id.fragment_container, selectedFragment);
        transaction.commit();
      }

      return true;
    });
```

```
    // Set default fragment
    bottomNavigationView.setSelectedItemId(R.id.nav_chats);
  }
}
```

Settingsfragment.java:

```
package com.example.myapplication;

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class SettingsFragment extends Fragment {

  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle
savedInstanceState) {
    return inflater.inflate(R.layout.fragment_settings, container, false);
  }
}
```

Contactfragemtns.java:

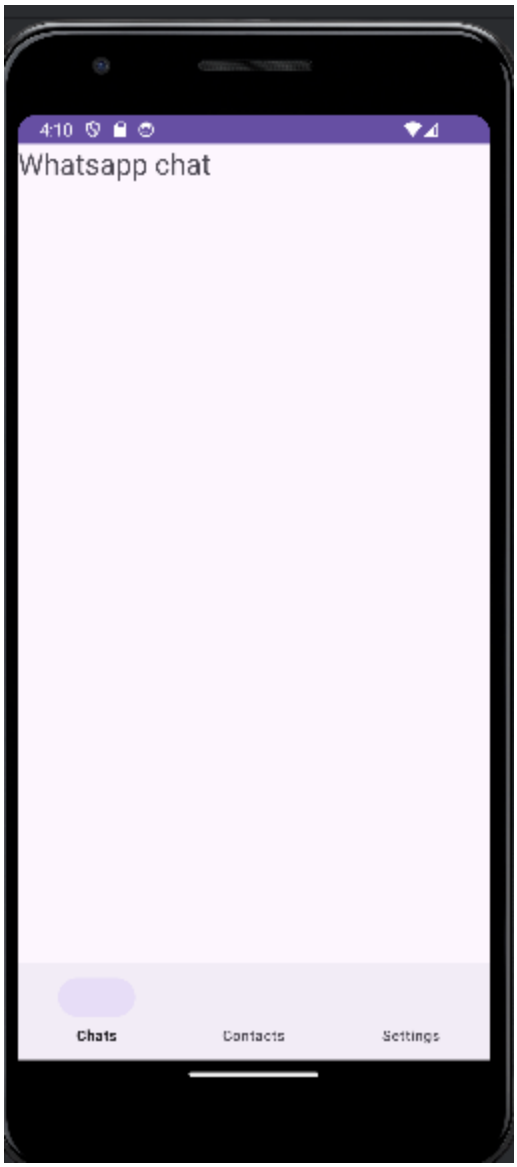
```
package com.example.myapplication;

import android.os.Bundle;
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class ContactsFragment extends Fragment {

  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle
savedInstanceState) {
    return inflater.inflate(R.layout.fragment_contacts, container, false);
  }
}
```

Chatfragment.java:

```
package com.example.myapplication;

import android.os.Bundle;
```

```
import androidx.annotation.NonNull;
import androidx.annotation.Nullable;
import androidx.fragment.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class ChatFragment extends Fragment {

  @Nullable
  @Override
  public View onCreateView(@NonNull LayoutInflater inflater, @Nullable ViewGroup container, @Nullable Bundle
savedInstanceState) {
      return inflater.inflate(R.layout.fragment_chat, container, false);
  }
}
```

Output:



8. Write an android application that will parse XML data

Solution:

xml file:

```
<?xml version="1.0"?>
<records>
<car>
<name>Audi</name>
<price>5000000</price>
</car>
<car>
<name>BMW</name>
<price>7000000</price>
</car>
<car>
<name>Mercedes-Benz</name>
```

```
<price>10000000</price>
</car>
</records>
```

xml:

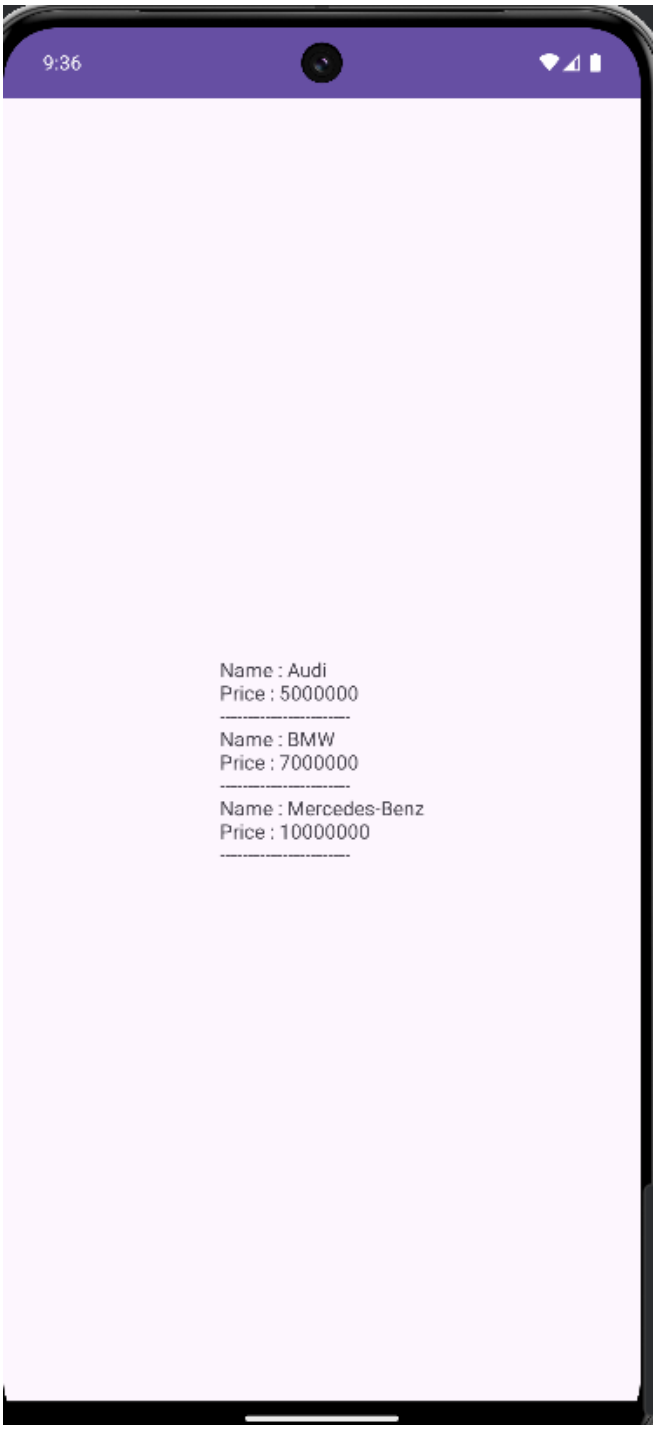
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:id="@+id/main"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">

  <TextView
     android:layout_width="wrap_content"
     android:layout_height="wrap_content"
     android:id="@+id/tv1"
     app:layout_constraintBottom_toBottomOf="parent"
     app:layout_constraintEnd_toEndOf="parent"
     app:layout_constraintStart_toStartOf="parent"
     app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

java:

```
package com.example.la2q9;
import java.io.InputStream;

import javax.xml.parsers.DocumentBuilder;
import javax.xml.parsers.DocumentBuilderFactory;
import org.w3c.dom.Document;
import org.w3c.dom.Element;
import org.w3c.dom.Node;
import org.w3c.dom.NodeList;
import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

public class MainActivity extends Activity {
  TextView tv1;

  @Override
  public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_main);
     tv1=(TextView)findViewById(R.id.tv1);
     try {
```

```
        InputStream is = getAssets().open("new.xml");

        DocumentBuilderFactory dbFactory = DocumentBuilderFactory.newInstance();
        DocumentBuilder dBuilder = dbFactory.newDocumentBuilder();
        Document doc = dBuilder.parse(is);

        Element element=doc.getDocumentElement();
        element.normalize();

        NodeList nList = doc.getElementsByTagName("car");
        for (int i=0; i<nList.getLength(); i++) {

            Node node = nList.item(i);
            if (node.getNodeType() == Node.ELEMENT_NODE) {
                Element element2 = (Element) node;
                tv1.setText(tv1.getText()+"\nName : " + getValue("name", element2)+"\n");
                tv1.setText(tv1.getText()+"Price : " + getValue("price", element2)+"\n");
                tv1.setText(tv1.getText()+"----------------------");
            }
        }

    } catch (Exception e) {e.printStackTrace();}

}
private static String getValue(String tag, Element element) {
    NodeList nodeList = element.getElementsByTagName(tag).item(0).getChildNodes();
    Node node = (Node) nodeList.item(0);
    return node.getNodeValue();
}

}
```

Output:



9. Write an android application that will parse JSON data

Solution:

Json file:

```
[
  {
    "name": "Mango",
    "price": "500"
```

```
  },
  {
    "name": "Kiwi",
    "price": "200"
  }
]
```

xml:

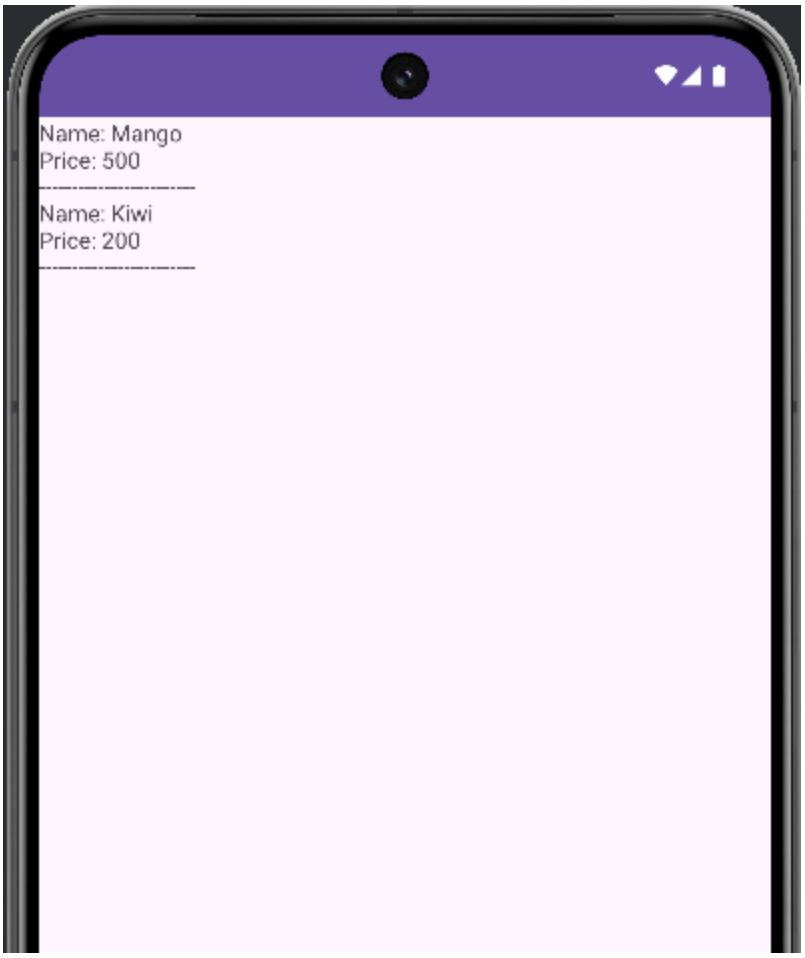
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
  xmlns:app="http://schemas.android.com/apk/res-auto"
  xmlns:tools="http://schemas.android.com/tools"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  tools:context=".MainActivity">

  <TextView
    android:id="@+id/tvData"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentLeft="true"
    android:layout_alignParentTop="true"
    android:layout_marginLeft="75dp"
    android:layout_marginTop="46dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

java:

```
package com.example.la2q10;

import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

import org.json.JSONArray;
import org.json.JSONException;
import org.json.JSONObject;

import java.io.InputStream;
import java.io.IOException;

public class MainActivity extends Activity {

  private TextView tvData;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    tvData = findViewById(R.id.tvData);
```

```
    try {
        // Load JSON data from assets
        InputStream is = getAssets().open("New.json");
        int size = is.available();
        byte[] buffer = new byte[size];
        is.read(buffer);
        is.close();

        String jsonString = new String(buffer, "UTF-8");
        JSONArray jsonArray = new JSONArray(jsonString);
        StringBuilder sb = new StringBuilder();
        for (int i = 0; i < jsonArray.length(); i++) {
            JSONObject jsonObject = jsonArray.getJSONObject(i);
            String name = jsonObject.getString("name");
            String price = jsonObject.getString("price");
            sb.append("Name: ").append(name).append("\n");
            sb.append("Price: ").append(price).append("\n");
            sb.append("----------------------\n");
        }

        tvData.setText(sb.toString());

    } catch (IOException | JSONException e) {
        e.printStackTrace();
    }
  }
}
```

Output:


Name: Mango
Price: 500
Name: Kiwi
Price: 200